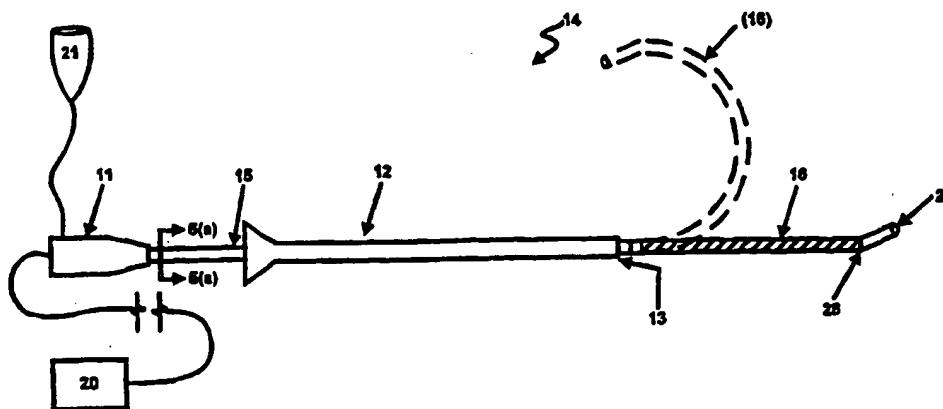




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/US97/19189		(72) Inventors; and (75) Inventors/Applicants (for US only): SHARKEY, Hugh, J. [US/US]; 935 Corriente Pointe Drive, Redwood City, CA 94065 (US). ASHLEY, John [US/US]; 184 Burlwood Drive, San Francisco, CA 94127 (US). SAAL, Jeffrey [US/US]; 95 Sausal Drive, Portola Valley, CA 94028 (US). SALL, Joel [US/US]; 46 Vista Verde Way, Portola Valley, CA 94028 (US). LE, Le, T. [VN/US]; 2694 Somerset Park Circle, San Jose, CA 95132 (US). WEISSMAN, Lee [US/US]; 4171 Boneso Circle, San Jose, CA 95134 (US).	
(22) International Filing Date: 22 October 1997 (22.10.97)		(74) Agent: CARY, Charles, C.; Wilson Sonsini Goodrich & Rosati, 650 Page Mill Road, Palo Alto, CA 94304-1050 (US).	
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60/029,735 23 October 1996 (23.10.96) US 60/029,600 23 October 1996 (23.10.96) US 60/029,734 23 October 1996 (23.10.96) US 60/029,602 23 October 1996 (23.10.96) US Not furnished 8 May 1997 (08.05.97) US 60/046,001 8 May 1997 (08.05.97) US Not furnished 8 May 1997 (08.05.97) US Not furnished 28 May 1997 (28.05.97) US 60/047,820 28 May 1997 (28.05.97) US Not furnished 28 May 1997 (28.05.97) US 60/047,848 28 May 1997 (28.05.97) US 08/881,525 24 June 1997 (24.06.97) US 28/881,692 24 June 1997 (24.06.97) US 08/881,527 24 June 1997 (24.06.97) US 08/881,693 24 June 1997 (24.06.97) US 08/881,694 24 June 1997 (24.06.97) US		Published With international search report.	
(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Applications US 60/029,600 (CIP) Filed on Not furnished (Continued on the following page)		(88) Date of publication of the international search report: 22 October 1998 (22.10.98)	
(71) Applicant (for all designated States except US): ORATEC INTERVENTIONS, INC. [US/US]; 3700 Haven Court, Menlo Park, CA 94025 (US).			

(54) Title: METHOD AND APPARATUS FOR TREATING INTERVERTEBRAL DISCS



(57) Abstract

Percutaneous methods and systems for treating an intervertebral disc are disclosed. An intervertebral disc treatment apparatus includes an introducer (12) and a catheter (14) having a distal end (28), a proximal end, a longitudinal axis, and an intradiscal section (16) at the distal end on which there is at least one functional element (29). The treatment proceeds by applying a force longitudinally to the proximal end of the catheter which is sufficient to advance the intradiscal section through the nucleus pulposus and around an inner wall of an annulus fibrosus, but which force is insufficient to puncture the annulus fibrosus. The functional element is positioned at a selected location of the intervertebral disc by advancing or retracting the catheter and optionally twisting the proximal end of the catheter. Then, the functional unit treats the intervertebral disc. Optionally, there is an additional step of aspirating and/or adding a substance to the intervertebral disc.

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US	Not furnished (CIP)
Filed on	Not furnished
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US	08/881,694 (CIP)
Filed on	Not furnished

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/19189

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61B17/36

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A61B A61M A61N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 682 910 A (TIEBER ET AL.) 22 November 1995 see column 5, line 7-19 ---	1,25,47, 50,63, 69,74, 76,86,87
A	EP 0 274 705 A (FRIMBERGER) 20 July 1988 see column 3, line 44 - column 4, line 4 ---	1,25,47, 50,63, 69,74, 76,86,87
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A	EP 0 521 595 A (LUNDQUIST) 7 January 1993 --- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"Z" document member of the same patent family

Date of the actual completion of the international search

18 May 1998

Date of mailing of the international search report

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Glas, J

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/19189

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

Claims 1: 1-34, 47-56, 63-75, 86, 87

Claims 2: 57-62, 89-94

Claims 3: 76-80

Claims 4: 95, 96

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 97/19189

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 35-46, 81-85, 88
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

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International Application No

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